



THE STATE  
of **ALASKA**  
GOVERNOR MIKE DUNLEAVY

**Department of Natural Resources**

DIVISION OF OIL AND GAS

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March 9, 2023

Keegan Fleming  
Senior Environmental Specialist  
Hilcorp Alaska, LLC  
3800 Centerpoint Drive Ste. 1400  
Anchorage, Alaska 99503

**RE: LOCI 04-007, Hilcorp Alaska, LLC, Ninilchik Unit, Paxton Pad, Two Grass Roots Wells, Unit Plan of Operations Amendment Decision**

Dear Mr. Fleming:

The Alaska Department of Natural Resources, Division of Oil and Gas (Division), in accordance with Alaska Statute 38.05 and Alaska Oil and Gas Leasing Regulations (11 AAC 83) grants authorization to conduct activities in support of the Ninilchik Unit (NKU) as proposed in the NKU Plan of Operations (Plan) amendment request dated December 17, 2022, for the above referenced project.

**Scope:**

Hilcorp Alaska, LLC (HAK) is requesting authorization to drill two grass roots wells from the Paxton Pad in the NKU. The project will include the installation of associated infrastructure including gas flowlines, electrical instrumentation, well cellars, and conductors.

**Plan activities include:**

- Mobilization and preparations for drilling activities
- Drilling and well testing for Paxton #12
- Installation of associated infrastructure and tie-in Paxton #12 to existing Paxton Pad production infrastructure
- Gas production from Paxton #12
- Drilling and well testing for Paxton #13
- Installation of associated infrastructure and tie-in Paxton #13 to existing Paxton Pad production infrastructure
- Gas production from Paxton #13

**Location information:**

NKU

Paxton #12 and Paxton #13 Bottom Hole Locations

ADL: 384372

Meridian: Seward Township: 001S Range: 014W Section: 12

**Paxton Pad**

Meridian: Seward Township: 001S Range: 014W Section: 13  
Latitude, Longitude: 60.09456 N, -151.6134 W

Paxton Pad is located approximately four miles northeast of Ninilchik and is on privately-owned surface and subsurface lands.

**Agency review:**

The Division provided a review and comment opportunity for the activities considered for authorization under this decision. The following government entities were notified on January 5, 2023, for comment on the Plan: DNR: Division of Mining, Land and Water (DMLW), Alaska Department of Environmental Conservation (ADEC), Alaska Department of Fish and Game (ADF&G), and the Kenai Peninsula Borough (KPB). ADEC provided a comment; no other comments were received. See Appendix A for the agency comment and response.

**Public Notice:**

Public notice of the Plan and opportunity to comment was provided on the State of Alaska's online public notice website and the Division's website on January 11, 2023. Faxes of the public notice were sent to the Clam Gulch and Ninilchik post offices. Additionally, public notice was published in the Anchorage Daily News on January 17 and January 31, 2023, and the Peninsula Clarion on January 19, and February 2, 2023. The deadline for comments was February 11, 2023, at 4:30 pm Alaska time. Comments were submitted. See Appendix B for the public comments and responses.

**Conditions/Stipulations:**

A certified As-Built survey of the activity shall be provided within one year of placement of the improvement. This As-Built must contain a hard copy, as well as a digital GIS file containing a Shapefile or ESRI Feature Class.

Please attach this amendment approval with the original decision. This Unit Plan of Operations amendment approval is issued in accordance with Alaska Statute 38.05, Alaska Administrative Codes 11 AAC 83.346 and 11 AAC 83.303. The Division reviewed this amendment under the unit regulation for the Plan, 11 AAC 83.346, and considers the factors set forth in 11 AAC 83.303(a) and (b). The amendment was also evaluated against the NKU agreement for conformance.

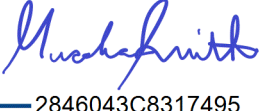
This approval signifies only that the State of Alaska has no objection to the operations outlined in the Plan amendment application. It does not constitute certification of any property right or land status claimed by the applicant, nor does it relieve the applicant of responsibility to obtain approvals or permits from other persons or governmental agencies that may also be required. All stipulations contained in the original lease and subsequent Plan approvals remain in full force and effect.

If activities have not commenced, this approval expires on March 9, 2026. Failure to comply with the terms and conditions outlined in the lease, the attached stipulations, and this authorization may result in revocation of this unit operations approval.

Any questions or concerns about this amendment may be directed to Natural Resource Specialist Ashley Ethridge at 907-269-8815 or emailed to [ashley.ethridge@alaska.gov](mailto:ashley.ethridge@alaska.gov).

Sincerely,

DocuSigned by:



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Graham Smith

Petroleum Land Manager

A person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal must be received within 20 calendar days after the date of "issuance" of this decision, as defined in 11 AAC 02.040(c) and (d) and may be mailed or delivered to the Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918, or sent by electronic mail to [dnr.appeals@alaska.gov](mailto:dnr.appeals@alaska.gov). Under 11 AAC 02.030, appeals and requests for reconsideration filed under 11 AAC 02 must be accompanied by the fee established in 11 AAC 05.160(d)(1)(F), which has been set at \$200 under the provisions of 11 AAC 05.160 (a) and (b). This decision takes effect immediately. If no appeal is filed by the appeal deadline, this decision becomes a final administrative order and decision of the department on the 31st calendar day after issuance. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.

Attachments: Figures 1-2

Appendix A: Agency Comments

Appendix B: Public Comments

2018 Cook Inlet Mitigation Measures

ecc: DOG: Ashley Ethridge, James Hyun, Alex Zinck, Hayley Beitel, Molly Fenton, Rebecca Marks, SPCO Records, and DOG Units

DMLW: Clifford Larson, Henry Brooks, Jessica Miller, and SAIL

ADF&G: Ronald Benkert

ADEC: DEC Agency Reviews, Charley Palmer, and DEC Water Oil and Gas

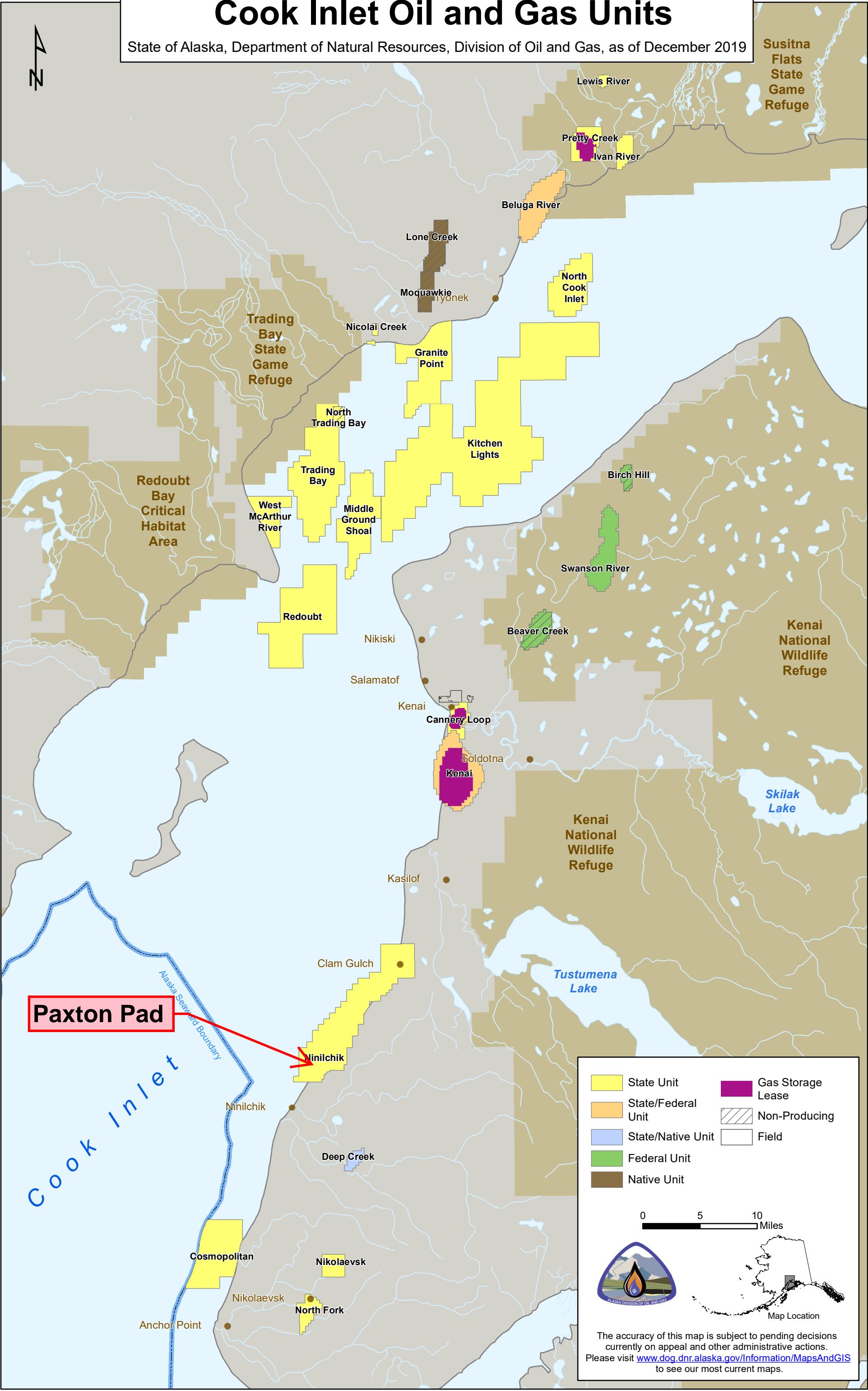
KPB: Marcus Mueller

Other: Patricia Waggoner, Natalie Millar, and Wayne Millar

Figure 1

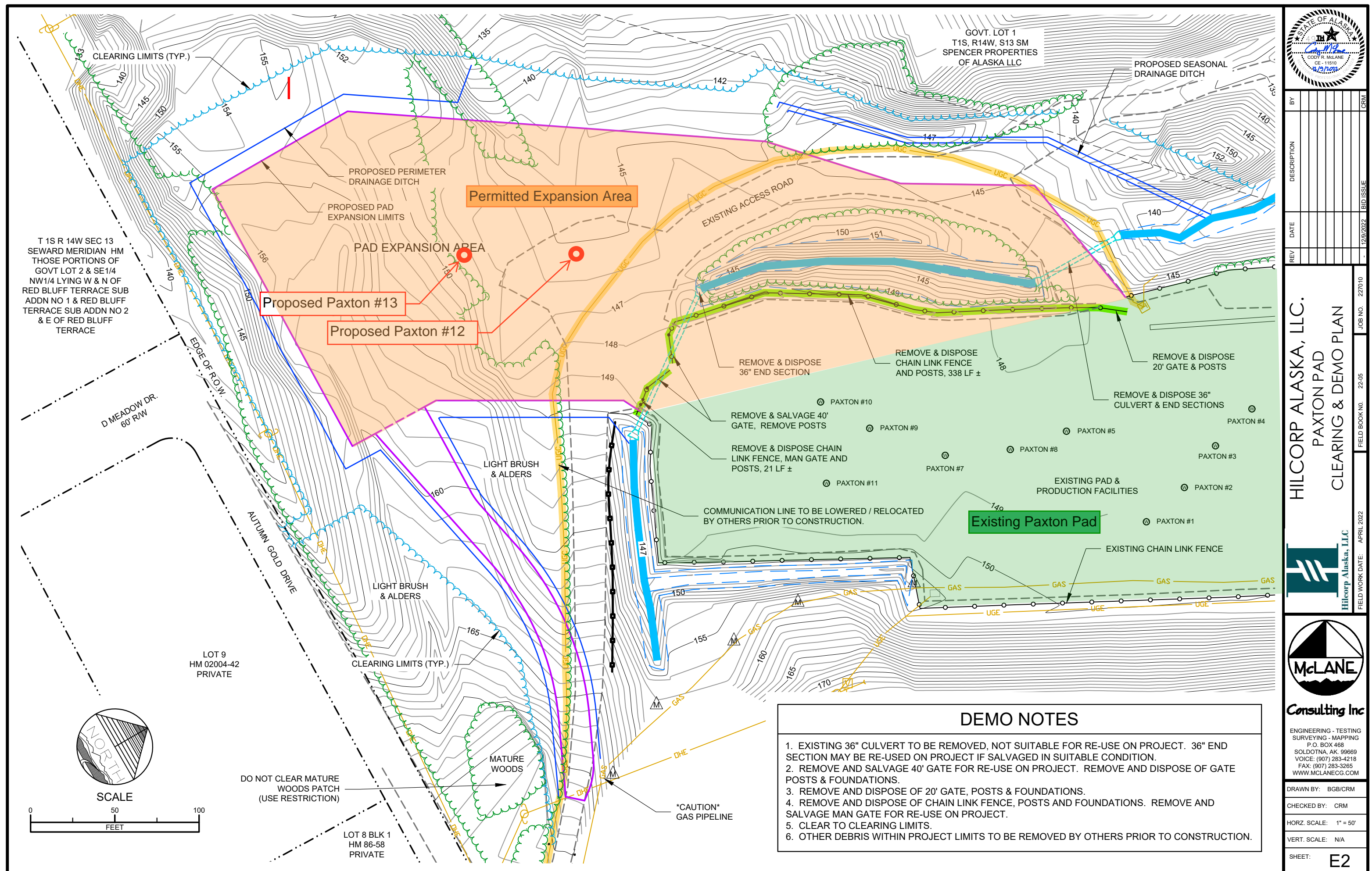
# Cook Inlet Oil and Gas Units

State of Alaska, Department of Natural Resources, Division of Oil and Gas, as of December 2019





### Figure 2



## **Appendix A: Agency Comments**

### **ADEC comment:**

Given the location(s) provided, this project is not near an active registered public water system (PWS) source. It should be noted that we also reviewed and commented on the TWUA associated with this property, TWUA A2018-153.

TWUA A2018-153 ADEC comment submitted January 11, 2019: One of the identified uses, “utility water”, may be considered a PWS, so please ensure that the applicant is in compliance with 18 AAC 80, and in direct communication with the Drinking Water Engineer for this region.

### **Hilcorp Response:**

The water that will be used from the water well located on Paxton Pad (TWUA A2018-153) is intended for drilling mud makeup only and will not be used in a potable water supply system at any point. The drill rig does not have a water supply system and there is no camp associated with this operation. All water for consumption on the rig is purchased bottled water.

### **Division Response:**

Comment noted.

## **Appendix B: Public Comments**

**Included below are comments received in response to the Division's public notice of Hilcorp's application. Also included are Hilcorp's responses to each comment and, finally, the Division's response to all submitted comments.**

### **Comments from Natalie and Wayne Millar, Ninilchik:**

To Whom It May Concern at, Department of Natural Resources,

We own the property at mile marker 131 on Sterling Highway. Behind us to the south is the existing Paxton Pad. To the north of us by less than a mile is the Kalotsa Pad. We bought our property in 2018 with the knowledge that Hilcorp had a pad with a continuous generator and twirling rotator on a post behind our property. We accepted the noise would be there and it has just become background noise that we are used to. We are not trying to be "not in our backyard people" and want to be good neighbors. But even good neighbors have their limits.

#### **Comment 1:**

As stated in my previous letter on 26 July 2022, the noise level during the drilling impacted our ability to even have a conversation on our property, as well as the ability to sleep at night. It caused increased sediment in our well and caused cracks in my home. I am including the pictures of the cracks as documentation of the damage. While I cannot prove that the well drilling caused the cracks, I am making sure that it is documented that any further damage after the proposed drilling needs to be addressed. Short term drilling already shakes our home. It actually rattles the furniture. We have concerns over multiple drillings affecting our house and shop foundations. It is like having multiple earthquakes. I am sure this is what caused the cracks in our wall and around our upstairs pillars.

#### **Applicant Response:**

Hilcorp is committed to safely and responsibly developing natural gas resources in the Kenai area. Specific concerns related to noise and groundwater impacts mentioned in this comment are addressed below in responses 2 and 3, respectively.

#### **Comment 2:**

One of my original concerns was that with the proposed expansion of the existing Paxton Pad there will be an increase in the noise of running the larger pad. I was told that the new expanded pad at Paxton would not create any additional noise. What was this evaluation based on? Please come visit us at mile marker 131 and listen to the generator sounds that we hear every day even inside our home. With a larger pad, they would need larger generators. The extra noise would make life unpleasant. While we are used to most of the current Paxton Pad noises, an increase would cause not only a concern on noise level, but on the very value of our property. It would affect all the properties in this area. Anybody selling would have to disclose Hilcorp drilling and the effects that go with the incorporation. Of course during the proposed 8 months of drilling, any buyer would steer clear of the area of drilling noise. The noise level will impact anybody in this area trying to sell.

#### **Applicant Response:**

The proposed project is to drill two grassroots gas wells and install associated infrastructure including gas flowlines, electrical instrumentation, well cellars, and conductors. There are no additional generators proposed as part of this application.

**Comment 3:**

Another continued concern I have is the drillings affect on our well. This concern was never addressed from Hilcorp. As explained in my earlier letter, normally we can change out our filters every 3 months. With the shaking of the ground, and our house during drilling, we are having to change filters every month because of the sediment being stirred up. We have had our water tested several times to make sure it is clean for drinking. What affect will the continuous intense shaking of the ground have on our ground water? And does the drilling affect the water levels in our wells? Does the drilling affect the springs in this area? I would like these questions addressed and answered. Why should we sacrifice our ability to have drinking water for any other people in this state? This creates an additional expense for us and zero benefits.

**Applicant Response:**

Drilling operations have no known effect on groundwater sources in the vicinity. The Alaska Oil and Gas Conservation Commission (AOGCC) regulates the safe installation of surface conductors to eliminate any interaction between drilling operations and potential drinking water aquifer. All wells are isolated from groundwater aquifers via wellbore casing and cement.

Drilling and operational use from water wells is intermittent. Water usage from groundwater wells is regulated by ADNDR-DMLW and permits a maximum allowable volume of water for use. The authorization process ensures that water use from ground water aquifers does not impact adjacent water wells. In situations where ADNDR-DMLW determines that the proposed water use may have an impact on adjacent water wells, the authorization requires that a "Water Use Agreement" be executed between well owners/operators. No water use agreement is required for the permitted groundwater well on Paxton Pad.

**Comment 4:**

Hilcorp Alaska Llc is needed for Natural Gas retrieval, but it does not benefit any of the people that are by the drilling. While they had made promises to make natural gas available to people in the area, they have since stated it is not feasible. So the people local to the drilling are not benefiting and are paying the cost for others to benefit.

**Applicant Response:**

Hilcorp is an upstream oil and gas company that supplies natural gas to utilities and does not interface directly with customers. Natural gas service for residents can be coordinated and managed by local utilities.

**Comment 5:**

I have included a map showing the current Paxton Pad on the next page. Our property is marked in yellow. From the picture, it is clear that our property is directly adjacent to where they have expanded. The 50 acres across from our 20 ocean side acres is almost all designated wetlands. By changing or affecting the water that flows under the road, Hilcorp is affecting the wetlands. Last year, that stream went completely dry and we notified DNR about it.

**Applicant Response:**

This application pertains to on-pad drilling and production operations only and does not address wetlands considerations related to previous construction activities. Wetlands impacts, use,



permitting, and subsequent mitigations are managed by the United States Army Corps of Engineers.

**Comment 6:**

On top of noise and dust pollution, there is the worry on losing our ground water/well, the continuous shaking of our house has already led to stress damage to our home. We continue to worry about damage to our shop foundation and an intense increase in traffic. We worry that the expansion will continue to the point that it is right next to our property, which would lower its resale value and the value of our neighbors.

**Applicant Response:**

Hilcorp acknowledges that during construction activities traffic in the area will be increased. This increase is anticipated to be temporary. Hilcorp employs road and pad watering techniques on an as-needed basis as a mitigation measure to suppress airborne dust propagation during construction, operations, and periods of increased operational activity during dry seasons. The proposed project is to drill two grassroots gas wells and install associated infrastructure including gas flowlines, electrical instrumentation, well cellars, and conductors. A pad expansion is not proposed as part of this application.

Concerns related to noise, groundwater, and shaking have been addressed in responses 1, 2 and 3, respectively.

**Comment 7:**

I also questioned what impact this has on Cook Inlet with it being so close to the intense pounding during the drilling of new wells. If the noise is so intense on land, how loud is it in water that carries noise? This question was never addressed. Do you have a study on it?

**Applicant Response:**

Hilcorp does not anticipate the sound associated with the proposed drilling activities to adversely impact marine life in Cook Inlet. In general, there is a large sound propagation loss as sound travels between air and water.

**Comments from Patricia Waggoner, Ninilchik:**

These comments are in response to the open comment period for LOCI 04-007, Drilling Two Grass Roots Wells at Paxton Pad. These comments also take into consideration permit 04-007, Expansion of Paxton Pad and LOCI 17-001, Expansion of Pearl Pad and Drill 3 new wells and the 18<sup>th</sup> POD Amendment (submitted 2/1/23, not currently approved). I live within 1200' of the two proposed wells at Paxton Pad and 0.9 miles from the Pearl Pad.

My ability to sleep and enjoy daily activities at my home are significantly disrupted by noise from construction, drilling and operations at the Paxton Pad. I am also impacted from noise generated at the Pearl Pad as well, but not to the extent of the Paxton Pad disruptions. Additional specific comments follow:

**Comment 1:**

Section IV, #3 Project Description – The applicant indicated that the project is in the currently under a Plan of Development (POD). However, the current, existing POD approved by ADNRC only discusses Pax #6, Pearl 8/9 and Blossom 1. The Applicant has submitted an Amendment to the current POD

(submitted 2/1/23), which discusses two or three new wells (the application isn't consistent in the number of wells). Additionally, the POD amendment does not address PAX # 11 or Pearl 12. The current POD application should reflect the proposed wells and be approved prior to authorizing this Plan of Operations amendment to drill the wells as required.

Specifically, the application does not identify the residences adjacent to the drill pads, nor does it describe the residences that the drill line will be going under. There are many people that live near these activities. The applicant should at the minimum document the number of residences that are impacted by their activities.

**Applicant Response:**

Hilcorp strives for consistency when it comes to operations and permitting timelines; however, due to varied permitting timelines, public comment periods, and scheduling considerations for construction activities that precede well drilling, Plan of Operations approvals and Plan of Development approvals are not identical at submittal and are updated to address planned work as needed. Hilcorp is working to finalize the Plan of Development Amendment, which will likely include additional wells at Paxton and Pearl Pads, but we acknowledge this has not yet been approved and is still in process with ADNR.

**Comment 2:**

Section VI: Schedule – While we understand that the project schedule can change, it currently shows that work at LOCI 04-007 and LOCI 17-001 would have overlapping use of RIG 169 (4/20/23 to 5/16/23) for drilling PAX 13 and Pearl 10. Please provide a realistic schedule for drilling and all other activities. The Paxton Pad expansion was delayed by over 4 months from the application. Considering all the applications, the applicant is proposing 8 months of “temporary” impacts. Realistically, how long will these impact last?

**Applicant Response:**

All schedules included in the plan of operations application are “proposed” and remain fluid based on a multitude of factors, including permitting timelines, well priority, rig scheduling, rig availability based on preceding projects, material availability, contractor availability, construction schedules, seasonal and environmental constraints, and imposed agency restriction periods.

Although Hilcorp strives to be as precise as possible when submitting permits, due to the above listed factors, exact scheduling is not always feasible at the time of application submittal. Currently, Hilcorp anticipates that pre-rig construction activities at the Pearl Pad will be conducted from 3/10/23 to 4/10/23. Drilling operations at Paxton Pad are anticipated from 3/10/23 to 4/10/23 and Pearl Pad from 4/10/23 to 6/1/23. Cumulative timeframe for drilling and construction activities at Pearl and Paxton Pads is anticipated from 3/10/23 to 6/2/23.

**Comment 3:**

Section VII, Number 2 – Buildings: Will additional compressor equipment be installed as part of this project? If additional compression is required will Hilcorp make upgrades to the compressor building to minimize disruptive noise from the compressor?

**Applicant Response:**

Hilcorp currently does not intend to install any additional compression at Paxton Pad under this authorization. We plan to utilize existing on-pad compressors.

**Comment 4:**

Section VII, #10 -Proposed Project: The FIVE new wells (Paxton 11 & 12 and Pearl 10, 11 and 12) are to be drilled consecutively. Hilcorp states in the application, “Sound impacts will be temporary and will occur primarily during construction and drilling”.

Temporary means over 8 months of continual disturbances within a mile of my home. The Paxton Pad will generate the most disturbance. While work at the Pearl Pad does keep me awake but not to the extent of causing the heart stopping sounds in the middle of the night that we hear from the Paxton Pad. The applicant states that “white noise” backup alarms will be used on site during drilling and construction. Day 1 of the Paxton Pad Expansion, which started in early January 2023, equipment was on site and using normal loud back up alarms were used. Please ensure that all equipment for construction, drilling, and operations is equipment with “white noise” backup alarms to the extent practical.

**Applicant Response:**

Hilcorp is committed to reducing the propagation of noise from our facilities wherever possible to the maximum extent safely possible, including the use of white noise backup alarms on drilling-related equipment.

A complaint of audible alarms being used by a construction contractor was communicated to Hilcorp by ADNOR on 1/13/2023. The complaint was responded to on 1/13/2023, the contractor was immediately notified, and the installation of safety-compliant muffling apparatus began on the same day. Hilcorp will continue to work with third party contractors to muffle audible alarms to the maximum extent safely possible.

**Comment 5:**

Noise Impacts:

Trucks, Equipment, Drill Rigs, Venting, Flaring, Operations (compressor, trucks, “upsets”, alarms). I have corresponded with Hilcorp, multiple state agencies, the Kenai Peninsula Borough and elected state officials over the past 9 years of “temporary” disturbances. Current operational noise impacts are annoying, cause interrupted sleep, and interfere with daily indoor living (have to turn the TV sound up) Venting and alarms in the middle of the night wake us up and scare the daylight out of us.

Hilcorp has been responsive in the past in limiting noise by using “white noise” backup alarms and handheld radios. However, these “fixes” don’t reduce the vast majority of the noise during drilling operations. In reviewing my interactions with Hilcorp since 2013, I have lost over 2 years worth of nights of sleep due to drilling, and a lot of other nights due to venting, alarms, trucks entering the site in the middle of the night.

**Applicant Response:**

Additional development drilling projects and associated construction are typical as oil and gas developments age to maintain production. Development drilling projects and associated construction are temporary in nature and typically occur over the course of 30-60 days. During these periods of activity, Hilcorp works hard to minimize visual and sound impacts during operation. Except where safety concerns dictate otherwise, lights on the drill rig and mobile light plants will be pointed down toward activities occurring on the pad. The typical use of loudspeakers to communicate during drilling are replaced by handheld radios. Additionally, drilling vehicles and heavy equipment will use broadband “white noise” backup alarms, instead

of the typical louder single-tone backup alarms. Audible alarms and natural gas venting during process upsets at the facility are required under state regulation.

**Comment 6:**

**Groundwater & Surface Water:**

Previous drilling activities have caused increased turbidity in adjacent property groundwater wells during and after drilling activities. Please test adjacent groundwater wells for turbidity prior to drilling to provide a baseline in the event nearby residents have turbid water from their wells post drilling. In addition, the stream realignment completed as part of the Paxton Pad Expansion is concerning to the adjacent property owners who own the wetland complex drained by the stream. What assurances are in place that 200 acres of designated wetland will not be affected or changed? Note that we have documented a change in drainage patterns since the previous pad expansion in 2014.

**Applicant Response:**

Drilling operations have no known effect on groundwater sources in the vicinity. The Alaska Oil and Gas Conservation Commission (AOGCC) regulates the safe installation of surface conductors to eliminate any interaction between drilling operations and potential drinking water aquifer. All wells are isolated from groundwater aquifers via wellbore casing and cement. Drilling and operational use from water wells is intermittent. Water usage from groundwater wells is regulated by ADNDR-DMLW and permits a maximum allowable volume of water for use. The authorization process ensures that water use from ground water aquifers does not impact adjacent water wells. In situations where ADNDR-DMLW determines that the proposed water use may have an impact on adjacent water wells, the authorization requires that a "Water Use Agreement" be executed between well owners/operators. No water use agreement is required for the permitted groundwater well on Paxton Pad.

This application pertains to on-pad drilling and production operations only and does not address wetlands considerations related to previous construction activities. Wetlands impacts, use, permitting, and subsequent mitigations are managed by the United States Army Corps of Engineers.

**Comment 7:**

**Safety:**

**Trucks & Equipment:** the entrances off the Sterling Highway to both the Paxton and Pearl Pads are located on basically blind corners. The winter construction at Paxton Pad caused several near accidents due to trucks entering and exiting Autumn Gold on the highway. The gravel trucks had trouble making it up the icy hill to the highway, and would run through the stop sign onto the Sterling Highway, causing people to have to slam on their brakes as they came coming around the blind corner and encountered the truck. I also witnessed trucks sliding down the highway past the turn on the icy roads.

Also, the current proposed schedule for work at both pads will cause increased turning truck traffic at both entrances during peak summer traffic.

**Applicant Response:**

Hilcorp is not aware of any near misses with company or contract equipment entering or exiting the roadway. Hilcorp requires all employees and contractors to comply with applicable traffic laws. During Paxton Pad construction, Hilcorp worked with the Department of Transportation to evaluate the daily traffic plan and current road conditions to ensure public safety. On several occasions work was halted (due to road conditions) to ensure public safety. Additionally, the

roadways where trucks were entering and exiting the Sterling Highway were sanded multiple times daily.

**Comment 8:**

Well Blowout:

How will adjacent residents be directly affected in the event of a well blowout during drilling? Hilcorp has not contacted adjacent residents regarding our concerns for safety during drilling activities. As more wells are drilled closer to residences what will happen when there is an accident during a drilling operation?

**Applicant Response:**

The Alaska Oil and Gas Conversation Commission (AOGCC) regulates and permits the downhole portion of all drilling activities within the State of Alaska. The AOGCC specifically considers the public's safety when approving the drilling program and mechanical design for all wells. Formation/downhole data as well as surface concerns (including proximity to adjacent residences) are considered when evaluating the permit to drill application for approval.

Although no commercial shallow gas zones are penetrated in the vicinity of Paxton Pad, a diverter system is utilized while drilling the surface segment of the wellbore. The diverter is fixed in an approved orientation that diverts any potential uncontrolled well release in a safe direction. The diverter line is oriented away from all ignition sources and neighboring residences as regulated by the AOGCC. The surface hole is then cemented off and a Blowout Preventer System is installed onto the well to control potential well control events while drilling the intermediate and/or production sections of the well.

**Comment 9:**

Appendix B: Mitigation Measures

The Applicant did not provide a mitigation measure analysis for this project. I am unable to comment on proposed mitigation measures to be implemented during the drilling.

**Applicant Response:**

No changes to the existing Paxton Pad mitigation measures were proposed as part of this project. The existing Paxton Pad mitigation measures are attached as reference.

**Comment 10:**

Conclusion: The above comments are the result of 9 ½ years of "temporary" impacts. Noise produced at the existing drill sites causes the biggest impact on my daily life. I am concerned with the piecemeal applications and the fact that cumulative effects are not considered due to the piecemeal nature. Can the State take a moment to stop and look at the cumulative and future impacts of drilling up to the 500 foot set back of Cook Inlet? It would be beneficial to work together to minimize impacts on adjacent residents. We don't get gas to our homes, we pay taxes like everyone else, but we aren't able to enjoy our homes or lives on a daily basis due to "temporary" impacts. Agencies and elected officials have suggested we just move. But would you? Thank you for accepting these comments and I look forward to a response.

**Applicant Response:**

Comment Noted.



**Division Response To All Public Comments:**

The Division recognizes the concerns expressed in the public comments and Hilcorp's efforts to mitigate the impacts of their drilling program. Hilcorp's proposed drilling activities will be conducted at an existing oil and gas site and will be temporary and limited to approximately one month per well.

The Division reached out to the DNR, DMLW, Water Management Unit to address water management questions. The Water Management Unit operates in accordance with Alaska Water Management Regulations set forth in 11 AAC 93. The following are summary responses from a state hydrologist:

1. What affect will the continuous intense shaking of the ground have on our ground water?

Drilling a well is a unique event in time that generates effects that will resolve at some point following the completion of the drilling process. Vibration can indeed disturb and thus suspend fine sediment into the water column in any area where those disturbances propagate and would contribute to turbidity increase. Other than turbidity, it should not affect water quality in any long-term way, beyond the temporary effect on the lifespan of filters as has been observed. As the suspended sediment is already in contact with the water, it is neither novel to the system nor newly exposed to significantly enhanced chemical interaction. Thus, it is unlikely to adversely affect water quality.

2. And does the drilling affect the water levels in our wells?

With more detailed information about the depth and proximity of both the oil-gas wells as well as the drinking water wells, DMLW can provide a more informed response. Conceptually, the oil/gas bearing features are separate from the groundwater aquifers providing drinking water. Any drilling that does not directly penetrate for access the groundwater aquifer should not affect the aquifer pressure and thus water level within the wells. As long as standard practices are followed, the only way drilling would affect water levels would be if these are not separate aquifers, in which case water quality would already be a concern prior to drilling.

3. Does the drilling affect the springs in this area?

As an oversimplification, as springs are surface expressions of groundwater, and groundwater is unaffected; thus the groundwater component will not be affected by drilling. Changes in artesian spring flow are influenced primarily by water use and seasonal events. Note that surface contamination of a spring could yet occur from poor practices or accidents.

If more detailed data is provided, or an application for water rights is submitted to the DMLW Water Management Unit, these issues could be addressed further. More information can be found by using the link below.

[Water Resources – Division of Mining, Land, and Water \(alaska.gov\)](http://alaska.gov)

The U.S. Army Corps of Engineers manages interactions with wetlands. More information can be found by using the link below.

[Alaska District Regulatory Program Overview.pdf \(army.mil\)](http://army.mil)

The Division approved the amendment for the 18<sup>th</sup> Plan of Development for the Ninilchik Unit on March 6, 2023. The decision document is available on the Division's website by using the link below.

[18th Ninilchik Unit POD - Amendment - 2023 - Approved.pdf \(alaska.gov\)](#)

The AOGCC manages drilling activities and operates in accordance with regulations set forth in 20 AAC 25. More information on AOGCC can be found by using the link below.

[AOGCC > Home \(alaska.gov\)](#)

The Kenai Peninsula Borough (KPB) is a local resource that may be able to assist with any zoning and ordinances related to noise.

[Home \(kpb.us\)](#)

The Division has requested that Hilcorp provide additional outreach to property owners adjacent to the project area to address any safety concerns and further questions they may have in regard to the project. Hilcorp has agreed to make contact with the landowners and is in the process of developing a comprehensive program to ensure the appropriate level of outreach occurs throughout the project.